

ABSTRACT

A doomed plasma reactor chamber uses an antenna driven by RF energy which is inductively coupled inside the reactor dome. The antenna generates a high density, low energy plasma inside the chamber for etching metals, dielectrics and semiconductor materials. Auxiliary RF bias energy applied to the wafer support cathode controls the cathode sheath voltage and controls the ion energy independent of density. The RF energy inductively coupled to the dome creates a heat that must be moderated. The invention herein utilizes a temperature-controlled airflow to supply a continuously variable air temperature over a wide range of process conditions including idling.